

Tennessee Pollution Prevention Partnership Success Story



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Partnership Prevents Water & Money from Going Down the Drain

The Member

Saturn Corporation, a General Motors subsidiary, established a highly integrated automotive manufacturing and assembly complex of over seven million square feet in Spring Hill, Tennessee. Approximately 7,000 Saturn team members are involved in producing spaceframe components and body panels, painting vehicles, manufacturing engines and transmissions, auto assembly, warehousing for retailer parts, and ancillary activities. The Saturn Spring Hill facility currently produces small S-Series Saturn sedans and coupes sold through a network of approximately 440 dedicated retailers. A compact SUV, the VUE, will also be produced starting in 2001.



The Story

The Saturn plant has made a variety of process and environmental improvements since initial production in 1990. In a recent continual improvement initiative, Saturn focused on reducing water usage, by redirecting water in the phosphate painting pretreatment system for reuse as rinse water.

Supplier personnel from Henkel Chemical Management (HCM), Henkel Surface Technologies (HST), and members of Saturn's Phosphate/e-coat team in the Body Systems Paint Shop found a new way to reuse rinse water in a multi-stage paint preparation process. Originally, de-ionized water was purged in stage #12, flowed back to stage # 11, then flowed back to stage #10. From there it went to an

on-site pretreatment plant. A change was made to redirect that water into the stage #8 reservoir, which provided one more additional reuse as rinse water. This replaced using city water in stage #8, and also eliminated one of the waste flow streams going to the wastewater plant.

A key component of this success was teamwork. "We have worked together with Rich Angel, spaceframe process engineer, and Jeff Inman, maintenance engineer," says Charlie Lyman with HST. "Certain things changed in the process, and it was important to prevent any impact to parts quality either upstream or downstream from chemicals going through the rinse water system."

The Success

Since this change was initiated in 1999, Saturn has saved about twenty-one (21) million gallons of water per year, with a small capital investment. This project reflects that "what's good for the environment is good for business."

The Pollution Prevented

Since its beginnings, Saturn Corporation has strived to implement water conservation measures in the design of the facility and its operations; for example, selecting cutting fluids with long lifetimes, installing automatically controlled closed-loop cooling systems wherever feasible, avoiding operations that require continuous make-up or discharge of water, and establishing a "user charge" accounting system so that the users of water are required to proportionately pay for their consumption. However, continual improvement is a sustaining Saturn value, and this project supports the commitment to "be good citizens, protect the environment, and conserve natural resources."

TENNESSEE POLLUTION PREVENTION PARTNERSHIP
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